

What is claimed is:

1. A process for producing a metal foam in a die-casting machine comprising a sleeve or short chamber and a die cavity which comprises foaming a mixture comprising a metal melt and a blowing agent in the die cavity, whereby the blowing agent is solid at room temperature.
2. The process according to claim 1, wherein the mixture comprising the metal melt and the blowing agent is formed by introducing the metal melt and the blowing agent into the die cavity at the same time.
3. The process according to claim 1, wherein the mixture comprising the metal melt and the blowing agent is formed before introducing the mixture to the die cavity.
4. The process according to claim 3, wherein the mixture comprising the metal melt and the blowing agent is formed in the sleeve or shot chamber and is then introduced to the die cavity.
5. The process according to claim 1, wherein the mixture comprising the metal melt and the blowing agent is formed by introducing first the metal melt into the die cavity and then adding the blowing agent.
6. The process according to claim 1, wherein the mixture comprising the metal melt and the blowing agent is formed by first introducing the blowing agent into the die cavity and then adding the metal melt.
7. The process according to claim 1, wherein the die cavity is filled with the mixture comprising the metal melt and the blowing agent before foaming said mixture.
8. The process according to claim 7, wherein the die cavity is not heated.
9. The process according to claim 1, wherein the die cavity is underfilled by a defined volume.
10. The process according to claim 9, wherein the die cavity is heated.

11. The process according to claim 1, wherein the metal melt is a melt of a light metal.
12. The process according to claim 1, wherein the metal is aluminum or an aluminum alloy.
13. The process according to claim 1, wherein the metal is Mg or a Mg alloy.
14. The process according to claim 1, wherein the process is a cold-chamber process.
15. The process according to claim 1, wherein the process is a hot-chamber process.
16. The process according to claim 1, wherein the blowing agent is a metal hydride.
17. The process according to claim 16, wherein the metal hydride is a light-metal hydride.
18. The process according to claim 17, wherein the light-metal hydride is magnesium hydride, titanium hydride, a titanium carbonate or a titanium hydride.
19. A metal body obtained by the process according to claim 1.
20. The metal body according to claim 19, which is a component for a vehicle.
21. The metal body according to claim 19, wherein the metal in the component is an alluminum alloy.
22. The metal body according to claim 19, which has a surface which is closed on all sides and a hollow structure in the interior.
23. A metal body which has a surface which is closed on all sides and a hollow structure in the interior.
24. A process for producing a metal foam in a die-casting machine comprising a sleeve or shot chamber and a die cavity which comprises foaming, in the die cavity, a metal melt and from about 0.01 to

about 10% by weight, based on the metal melt, and at least one blowing agent, whereby the blowing agent is solid at room temperature.

25. The process according to claim 24, wherein the amount of blowing agent is from 0.01 to 10% by weight, based upon metal melt.
26. The process according to claim 24, wherein the amount of blowing agent is from about 0.1 to about 10% by weight based upon metal melt.
27. The process according to claim 24, wherein the blowing agent is a light-metal hydride.
28. The process according to claim 24, wherein the light metal hydride is magnesium hydride, titanium hydride, a titanium carbonate or a titanium hydrate.
29. The process according to claim 27, wherein the light-metal hydride is autocatalytically produced.
30. The process according to claim 24, wherein the metal melt is a light metal.
31. The process according to claim 29, wherein the light metal is aluminum or an aluminum alloy.
32. The process according to claim 24, wherein the mixture comprising the metal melt and the blowing agent is formed by introducing the metal melt and the blowing agent into the die cavity at the same time.
33. The process according to claim 24, wherein the mixture comprising the metal melt and the blowing agent is formed before introducing the mixture to the die cavity.
34. The process according to claim 33, wherein the mixture comprising the metal melt and the blowing agent is formed in the sleeve or shot chamber and is then introduced into the die cavity.
35. The process according to claim 24, wherein the mixture comprising the metal melt and the blowing agent is formed by introducing first the metal melt into the die cavity and then adding the blowing agent.

36. The process according to claim 24, wherein the mixture comprising the metal melt and the blowing agent is formed by first introducing the blowing agent into the die cavity and then adding the metal melt.
37. The process according to claim 24, wherein the die cavity is completely filled with the mixture comprising the metal melt and the blowing agent before foaming said mixture.
38. The process according the claim 24, wherein the die cavity is underfilled by a defined volume of metal melt.
39. The process according to claim 24, wherein the process is a hot-chamber process.
40. The process according to claim 24, wherein the process is a cold-chamber process.
41. The process according to claim 24, wherein the metal is nonferrous or base metal.
42. The process according the claim 24, wherein the metal is selected from the group consisting of magnesium, calcium, aluminum, silicon, titanium, zinc and an alloy of said metals.
43. A metal body obtained by the process according to claim 24.
44. The metal body according to claim 43, which is component for a vehicle.
45. The metal body according to claim 43, which has a surface that is closed on all sides and a hollow structure in the interior.